

Date: Tue, 11 Jan 94 15:10:20 PST  
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>  
Errors-To: Info-Hams-Errors@UCSD.Edu  
Reply-To: Info-Hams@UCSD.Edu  
Precedence: Bulk  
Subject: Info-Hams Digest V94 #24  
To: Info-Hams

Info-Hams Digest                      Tue, 11 Jan 94                      Volume 94 : Issue    24

Today's Topics:

BRAIN CANCER, LEUKEMI  
    Fm Broadcast  
    Log Periodics and DXing  
    Phonecalls from 20,00  
Power Lines Cause Cancer? Maybe Not...  
    Repeater database?  
THANK YOU FOR CANCER REMARKS.  
    why 29.94 fps? (2 msgs)

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>  
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Tue, 11 Jan 1994 17:40:00 GMT  
From: swrinde!cs.utexas.edu!math.ohio-state.edu!magnus.acs.ohio-state.edu!csn!  
springsboard!alex.lane@network.ucsd.edu  
Subject: BRAIN CANCER, LEUKEMI  
To: info-hams@ucsd.edu

D.Rodman writes:

-> There are currently a series of prospective and retrospective  
-> articles appearing in the literature which point to the likely  
-> relationship between some forms of cancer in children and proximity  
-> to power lines. This is no scare tactic, I assure you.

I am currently gathering material of this kind. Since this information  
you must have close at hand, could I trouble you for a brief list of  
citations? Thanks.

Cheers...

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The SpringsBoard BBS      | "You *can* get here from there."
Pagosa Springs, Colorado  | KD6JJA
Alex Lane (303) 264-2339   | alex.lane@springsboard.org
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Date: 11 Jan 94 20:02:28 GMT
From: ogicse!uwm.edu!math.ohio-state.edu!sdd.hp.com!col.hp.com!srngenprp!
alanb@network.ucsd.edu
Subject: Fm Broadcast
To: info-hams@ucsd.edu
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chris andersen (akcs.marz@vpnet.chi.il.us) wrote:  
: Is it possible for a person with ham or modified ham set up to broadcast  
: on the 88-108 Mhz area???

None of the other respondents mentioned that it is perfectly legal to broadcast on the FM broadcast band using very low power. You can buy "wireless microphones" and other devices with a range of a couple hundred feet or so.

AL N1AL

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Date: 11 Jan 94 18:06:04 GMT
From: ogicse!emory!darwin.sura.net!fconvx.ncifcrf.gov!mack@network.ucsd.edu
Subject: Log Periodics and DXing
To: info-hams@ucsd.edu
```

In article <1994Jan11.142536.24875@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>In article <1994Jan10.172952.17636@worldbank.org> dearnshaw@worldbank.org (Darrell Earnshaw) writes:

>>I'm curious. Does anyone have any experience with HF (20 meters and above) Log  
>>Periodic antennas? I'd be particularly interested in learning how they compare  
>>with the TH-7DXX/KT34XA class of antenna.

>>

>>(I'm moving house, and considering a LP to replace my venerable TH-7. I've been  
>>kicking around the idea of a L.P, to get WARC band coverage. However, if the  
>>performance is such that my TH-7, or a TH-11, will outperform them for DXing  
>>and contesting, then I may reconsider.)

>>

>>Opinions/Comments ?

>  
>Reconsider. I don't know of any off the shelf LPs that will match your  
>current antennas. HyGain made some special ones for the military that  
>would be a match for your current antennas, but they were huge. In general,  
>an LP must be \*much\* larger than an optimized yagi for a given frequency  
>to have equivalent performance.  
>  
>Gary  
>--  
>Gary Coffman KE4ZV | You make it, | gatech!wa4mei!ke4zv!gary  
>Destructive Testing Systems | we break it. | uunet!rsiatl!ke4zv!gary  
>534 Shannon Way | Guaranteed! | emory!kd4nc!ke4zv!gary  
>Lawrenceville, GA 30244 | |

If you want an idea of what an L{ will look like on top of your house, look  
at the CQ calendar for this year - one of the pictures there will  
give you a good idea. Joe NA3T mack@ncifcrf.gov

-----  
Date: Tue, 11 Jan 1994 17:28:19 GMT  
From: swrinde!cs.utexas.edu!math.ohio-state.edu!magnus.acs.ohio-state.edu!csn!  
springsboard!alex.lane@network.ucsd.edu  
Subject: Phonecalls from 20,00  
To: info-hams@ucsd.edu

John Gladin writes:

-> Chris Magnuson writes:

-> -> .... it is possible to make phone calls from way up high by radio  
-> -> (check on the kids, etc.). Is this possible to do via a portable  
-> -> radio?

-> Alex Lane responds:

-> -> A number of 2-meter repeaters offer users a phone patch that allow  
-> -> to make phone calls through the repeater. ...

-> -> Of course, this pre-supposes you're a licensed ham with a 2-meter

-> -----

->

-> Here's a consideration in airborne operation:....

Many other postings also assume Chris wants to make phone calls from an  
airplane, and have provided useful caveats about radio operation from  
a plane. My response, however, assumes Chris will be operating \*on the  
ground\* (I know it's tough to find ground that's 20K feet up, but I  
figure what Chris meant is that he's going to be up high climbing  
mountains and stuff.)

Cheers...

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Pagosa Springs, Colorado | KD6JJA  
Alex Lane (303) 264-2339 | alex.lane@springsboard.org

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Date: 11 Jan 94 09:20:12 -0700  
From: library.ucla.edu!europa.eng.gtefsd.com!howland.reston.ans.net!  
sol.ctr.columbia.edu!hamblin.math.byu.edu!yvax.byu.edu!phycs1.byu.edu!  
peterson@network.ucsd.edu  
Subject: Power Lines Cause Cancer? Maybe Not...  
To: info-hams@ucsd.edu

Recently an interesting article came across the "What's New" feed from  
the American Institute of Physics (3 Dec 93 issue). To quote part of  
item 3:

"Just last month (What's New, 5 Nov 93), we reviewed 'The Great Power-Line  
Cover-up.' Now it appears that Finland has joined the cover-up! The Finns,  
it seems, are obsessive about keeping records, making it possible to calculate  
the exposure levels of children living near power-lines amounting to  
one-million person years! In the whole cohort of 134,800 children there were  
140 cancers, 5 less than expected. The only increased risk was for nervous  
system tumors among boys, but even that was attributed to one boy who had  
3 tumors."

I don't think this study ever made the news (doesn't fit the agenda of the  
news media establishment) and there is no reference to where the study was  
published. However, it does indicate that living next to power-lines (at  
least Finnish power-lines) may actually reduce the incidence of cancer.  
Maybe there is something different about power-lines in Denver that causes  
increased cancer (the original study) other than a difference in frequency  
(Finland does use 50 Hz like the rest of Europe don' they?).

Just food for thought.

Bryan Peterson  
peterson@phycs1.byu.edu

---

Date: Tue, 11 Jan 1994 20:57:58 GMT  
From: dog.ee.lbl.gov!agate!iat.holonet.net!bwilkins@network.ucsd.edu  
Subject: Repeater database?  
To: info-hams@ucsd.edu

clifto@indep1.UUCP (Cliff Sharp) after my editing writes:

: HAAT, on the other hand, provides clues that might be better left  
: unpublished...

HAAT is height above average terrain. The repeater I use is about 2000' above sea level. The HAAT is about 450'. This happens when there are taller hills within ten miles. Repeaters located in mountain valleys may have mountains towering around them and will often times show a calculated HAAT of - 200' as the repeater is 200' below the average terrain of the ten mile circle around the repeater. This does not mean the repeater does not get out vary far....propagation and defraction over the local terrain may allow this -200' repeater to cover over 100 miles.

This only works in mountainous areas....don't try this from the bottom of a 200' pit in flat country ;)

HAAT is just a calculation that attempts to even out the playing field.

```
:  
: --  
: +-----+  
: |   Cliff Sharp   |           clifto@indep1.chi.il.us           |  
: |   WA9PDM        |           clifto@indep1.UUCP never works   |  
: +-----+
```

Bob

--

Bob Wilkins n6fri                      voice 440.250+ 100pl san francisco bay area  
bwilkins@cave.org                      packet n6fri @ n6eeg.#nocal.ca.usa.na

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Date: 11 Jan 94 19:04:51 GMT  
From: ogicse!hp-cv!hp-pcd!hpspk1a!depaul@network.ucsd.edu  
Subject: THANK YOU FOR CANCER REMARKS.  
To: info-hams@ucsd.edu

Thank you to all who wrote articles on the posting I had called:

Brain Cancer, Leukemia from Ham Radio

I've printed out all articles both posted here and posted to my

address. Now I need to sit down in a quiet place and learn.

Again, THANK YOU FOR YOUR TIME!

Regards,

Marc DePaul  
KA3DNR

-----  
Date: Tue, 11 Jan 1994 00:08:44 GMT  
From: boulder!cnsnews!spot.Colorado.EDU!collinsn@uunet.uu.net  
Subject: why 29.94 fps?  
To: info-hams@ucsd.edu

In article <2gs9mk\$gd6@aurns1.aur.alcatel.com>,  
Clifton Powers <powers@aur.alcatel.com> wrote:  
> In article 3319@cmkrnl, jeh@cmkrnl.com (Jamie Hanrahan, Kernel Mode Systems)  
writes:  
> > In article <2g7p56\$9s9@crl2.crl.com>, lreeves@crl.com (Les Reeves) writes:  
> > > The colorburst frequency is not only cast in stone-it is extremely accurate.  
> > > It is more accurate as a frequency reference than WWV. This is provided  
> > > that you are tuned to a network-supplied program.  
>  
> > Also, at that time it was stated that the networks used rubidium-clock  
> > frequency standards, which are secondary standards: They're awfully good but  
> > they still have to be calibrated against something better. NIST (the folks  
who  
> > run WWV) uses cesium-beam clocks, which are primary standards, needing no  
> > calibration for frequency. Have the networks since upgraded to cesium-beam  
> > clocks? And, given that the local stations probably haven't, does it matter  
> > anyway? Even if they have, they're still "only" as good as NIST's clocks, so  
> > why should one over-the-air signal be better than another? (propagation  
> > changes on shortwave, maybe?)  
> >  
>  
> Colorburst transmit frequency is required to be +/-10Hz (5.5873E-6 or  
5.5873ppm).  
> PPM means parts per million.  
> This requires a good ovenized oscillator(that isn't cheap). Rubidium  
Oscillators  
> go for about \$20,000 I think. Cesium Beam clocks are > \$200,000.  
> The clocks that NIST uses are the best in the world. They have about 10 of them  
> that are all averaged together.  
>  
> WWV, however loses a lot in its method of transmission and to propagation

effects.

> Received accuracy (if you have a stable enough PLL to track it without further  
> loss of accuracy) is about  $1\text{E-}7$  (0.1ppm) frequency accuracy and 1ms for timing.

I couldn't find an exact figure to back this up, but quoting "NBS Special Publication 432" (National Bureau of Standards, which is now the National Institute of Standards and Technology (NIST)) (#432 supersedes publication 236) for WWV (Fort Collins, Colorado) & WWVH (Kauai, Hawaii): "Accuracy and Stability: The time and frequency broadcasts are controlled by the primary NBS Frequency Standard in Boulder, Colorado. The frequencies as transmitted are accurate to within one part in 100 billion ( $1 \times 10^{11}$ ) at all times. Deviations are normally less than one part in 1000 billion ( $1 \times 10^{12}$ ) from day to day. However, changes in propagation medium (causing Doppler effect, diurnal shifts, etc.) result in fluctuations in the carrier frequencies AS RECEIVED by the user that may be much greater than the uncertainty described above."

A binary coded decimal (BCD) time code is also transmitted on a 100Hz subcarrier by WWV & WWVH.

The audio portion of these broadcasts can be heard via telephone (but not the RF carriers). At (303)499-7111 for WWV and (808)335-4363 for WWVH. The accuracy received anywhere in the contiguous 48 states is 30ms or better.

Now if you want real accuracy ( :- ) ), try WWVB (Fort Collins, Colorado). This is a BCD time code only (1 bit per second!) on a 60KHz radio carrier. And to quote publication 432 again: "The frequency of WWVB is normally within its prescribed value to better than 1 part in 100 billion ( $1 \times 10^{11}$ ). Deviations from day to day are less than 5 parts in 1000 billion ( $5 \times 10^{12}$ ). Effects of the propagation medium on received signals are relatively minor at low frequencies; therefore, frequency comparisons to better than 1 part in  $10^{11}$  are possible using appropriate receiving and averaging techniques."

From publication 432: "Frequency Calibration Service Using Network Television: For those users who require only frequency calibrations, an alternative to the radio broadcasts is available. This service provides a means of calibrating oscillators traceable to NBS. It gives the user the option of calibrating his oscillator quickly at very low cost, with modest accuracy, or of expending more time and money for higher accuracy."

"The service is very reliable because the networks use extremely stable rubidium or cesium oscillators to generate the 3.58MHz color subcarrier frequency which is transmitted with all color programs. The color signal is then used as a transfer standard. Any oscillator that has a frequency of  $10/N$  MHz, where N is any integer from 1 to 100, can be calibrated."

"If a user wants to make a calibration, he compares the color signal coming from the network centers in New York City (or Los Angeles for those on the West Coast) with his local oscillator. NBS monitors the same network signals and publishes the difference between the network oscillators and the NBS Frequency Standard in the monthly NBS Time and Frequency Services Bulletin. A user then knows two things: (1) the difference between his oscillator and the network oscillators (by measurement) and (2) the difference between the networks and NBS (by publication). With this information, he can easily compute the difference between his oscillator and NBS. Thus, his calibration is traceable to the NBS Frequency Standard.".

"NBS has developed two methods for making these frequency calibrations. Equipment is commercially available for both methods.".

"Color Bar Comparator Method: The color bar comparator is a simple circuit that connects to a standard color television set. It produces a colored bar on the screen that changes color or moves across the screen at a rate that depends on the frequency difference between the user's oscillator and the TV network signal. By timing these changes with a stopwatch and referring to the data published by NBS, an oscillator can be rapidly calibrated to an accuracy of 1 part in 1 billion ( $1 \times 10^9$ ).".

"Digital Offset Computer Method: The second method, using a digital offset computer, provides an automatic means of calibrating high-quality crystal or atomic oscillators. It compares a signal from the user's oscillator with the TV color signal and displays the frequency difference on the TV screen as parts in 100 billion (parts in  $10^{11}$ ). If measurements are averaged over about 15 minutes, a calibration accuracy of one part in 100 billion can usually be achieved.".

NBS time can also be received via the GOES (Geostationary Operational Environmental Satellite) satellites of the National Oceanic and Atmospheric Administration (NOAA).

> Even to keep this accuracy would cost you at least \$1000. Stratum 3 oscillators used in non-central office telephone equipment are 4.7ppm and cost at least \$2000.

>

> Since the colorburst crystal in your TV is > 100ppm, any PLL that uses that crystal to lock onto an external source cannot be any better than 100ppm.

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> and frequency by modem. It would figure out the delay of the telephone path  
> and compensate for it. Some manufacturers (True Time was one of them) was  
working

(303)494-4774 (1200 baud, 8bit, 1stop, no parity).

Did everybody make it this far? :-)

-----  
Neil Collins collinsn@spot.colorado.edu

-----  
Date: Tue, 11 Jan 1994 00:11:42 GMT  
From: boulder!cnsnews!spot.Colorado.EDU!collinsn@uunet.uu.net  
Subject: why 29.94 fps?  
To: info-hams@ucsd.edu

In article <2gs9mk\$gd6@auris1.aur.alcatel.com>,  
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---

| Neil Collins

collinsn@spot.colorado.edu |

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